

Application No. 10/823,408
Amendment AF dated April 20, 2006
In Reply to Final Office Action of November 23, 2005
Attorney Docket No. 0388-043850

AMENDMENTS TO THE CLAIMS

I. Listing of Claims

1. (Currently Amended) An apparatus for transporting plate-shaped work pieces, comprising:

a frame; and

an air-supplying support means, which is supported on the frame and which supplies filtered air toward a lower surface of a plate-shaped work piece being transported so as to contactlessly support the plate-shaped work piece, wherein the air-supplying support means has a dust-removal filter for removing dust, a porous member located close to and above the dust-removal filter, and an air-supplying means having an electric fan for supplying filtered air toward the lower surface of the plate-shaped work piece through the dust-removal filter.

2. (Previously Presented) The apparatus for transporting plate-shaped work pieces according to claim 1, further comprising:

a drive force application means for applying a drive force in a transporting direction to the plate-shaped work piece;

wherein the drive force application means is provided with a drive rotor that contacts both end portions in a width direction, which is perpendicular to the transporting direction, of the plate-shaped work piece and applies a drive force thereto; and

wherein the air-supplying support means supports a portion located between the end portions of the plate-shaped work piece.

3. (Previously Presented) The apparatus for transporting plate-shaped work pieces according to claim 1, wherein the dust-removal filter and the air-supplying means are incorporated into a single unit, forming an air-supplying unit, and the air-supplying support means is formed by lining up a plurality of such air-supplying units in the transporting direction of the plate-shaped work piece.

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4. (Withdrawn) The apparatus for transporting plate-shaped work pieces according to claim 1, wherein the air-supplying[[-type]] support means is provided with a plurality of [[the]] dust-removal filters lined up in the transporting direction, and ventilation routes for distributively supplying air from the air-supplying means to the plurality of dust-removal filters.

5. (Previously Presented) The apparatus for transporting plate-shaped work pieces according to claim 1, further comprising:

a transport casing covering a transport space in which the air-supplying support means and a transporting route for the plate-shaped work piece are accommodated;

wherein the air-supplying means sucks in air within the transport casing and supplies the sucked-in air through the dust-removal filter and toward the lower surface of the plate-shaped work piece as filtered air, circulating the air within the transport space.

6. (Withdrawn) The apparatus for transporting plate-shaped work pieces according to claim 5, wherein the transport casing is provided with an air discharge portion for discharging some of the air within the transport space and an air introduction portion for introducing outside air into the transport space.

7. (Withdrawn) The apparatus for transporting plate-shaped work pieces according to claim 6, further comprising: an outside discharge means for removing dust from air discharged from the air discharge portion and discharging the air to the outside.

8. (Withdrawn) The apparatus for transporting plate-shaped work pieces according to claim 7, further comprising: an accommodation case covering, in a substantially airtight manner, an accommodation space accommodating drive means for the drive rotor in the drive force application means, the accommodation case being adjacent to the lateral side of the

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transport casing; wherein the air discharge portion of the transport casing discharges air within the transport space into the accommodation space; and wherein the outside discharge means sucks in air within the accommodation space, filters that air, and discharges it to the outside.

9. (Withdrawn) The apparatus for transporting plate-shaped work pieces according to claim 1, wherein the air-supplying[[-type]] support means is provided with [[a]] the ~~plate-shaped~~ porous member that which passes filtered air that has passed through the dust-removal filter, and a blocking portion that allows filtered air to flow through through holes of the porous member and conceals the through holes in the direction in which the filtered air flows.

10. (Currently Amended) The apparatus for transporting plate-shaped work pieces according to claim 1, wherein the frame, the dust-removal filter and the air-supplying means having [[an]] the electric fan constitutes at least a part of an upper level transport portion, and wherein a further frame, a further dust-removal filter and further air-supplying means having an electric fan constitutes at least a part of a lower level transport system, wherein the upper transporting portion can be rotated upward about one end portion so as to expose an upper area of the lower transporting portion.

11. (Withdrawn) The apparatus for transporting plate-shaped work pieces according to claim 1, wherein the air-supplying means is capable of switching an air supply amount of air that is supplied toward a lower surface portion of the transported object between a first air supply amount for contactlessly supporting the transported object and a set air supply amount that is different from the first air supply amount.

12. (Withdrawn) The apparatus for transporting plate-shaped work pieces according to claim 11, wherein the set air supply amount is less than the first air supply amount.

13. (Withdrawn) The apparatus for transporting plate-shaped work pieces

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according to claim 11, wherein the set air supply amount is greater than the first air supply amount.

14. (Previously Presented) The apparatus for transporting plate-shaped work pieces according to claim 1, wherein a first circulation path that allows air to flow downward is formed to the side of the air-supplying support means.

15. (Previously Presented) The apparatus for transporting plate-shaped work pieces according to claim 1, wherein a second circulation path for discharging downward the filtered air that has been supplied to the lower surface of the plate-shaped work piece is formed in the air-supplying support means at an intermediate location in the width direction, which is perpendicular to the transporting direction, of the plate-shaped work piece.

16. (Currently Amended) The apparatus for transporting plate-shaped work pieces according to claim 15, wherein the air-supplying support ~~member~~ means has air-supplying units in which the dust-removal filter and the air-supplying means are incorporated into a single unit, and which are lined up in the transporting direction and the width direction; and
wherein the second circulation path is formed by separating the air-supplying units lined up in the width direction.

17. (Previously Presented) The apparatus for transporting plate-shaped work pieces according to claim 15, comprising:
a discharged air amount adjustment means for adjusting the amount of air discharged over the second circulation path.

18. (Currently Amended) The apparatus for transporting plate-shaped work pieces according to claim 17, wherein the porous[[-]]_member has a ventilation portion that permits ventilation into the second circulation path.

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19. (Previously Presented) The apparatus for transporting plate-shaped work pieces according to claim 18, wherein the porous member is partitioned in the width direction and formed by a plurality of plate-shaped portions, and the ventilation portion is formed by positioning the plurality of plate-shaped portions leaving a spacing between them in the width direction; and

wherein the discharged air amount adjustment means adjusts the spacing between the plate-shaped portions of the porous member, adjusting the amount of air discharged through the second circulation path.

20. (Withdrawn) The apparatus for transporting plate-shaped work pieces according to claim 18, wherein the discharged air amount adjustment means is provided with an adjustment plate for adjusting an extent of the opening of the ventilation portion.

21. (Previously Presented) The apparatus for transporting plate-shaped work pieces according to claim 16, wherein the air-supplying support means is formed by the air-supplying units lined up in the transporting direction, and a third circulation path that discharges the filtered air supplied onto the lower surface of the plate-shaped work piece downward is formed by separating the air-supplying units lined up in the transporting direction.

22. (Previously Presented) The apparatus for transporting plate-shaped work pieces according to claim 15, further comprising:

a drive force application means for applying a drive force in the transporting direction to the plate-shaped work piece;

wherein the drive force application means is provided with a drive rotor for supporting an end side of the plate-shaped work piece in a contacting manner, a driven rotor for supporting the other end side of the plate-shaped work piece in a contacting manner, a drive mechanism for driving the drive rotor, and a transmission mechanism for transmitting the motive

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force of the drive mechanism to the driven rotor;

wherein the drive force application means is configured such that it applies a drive force while supporting both end portions of the plate-shaped work piece in a contacting manner with the drive rotor and the driven rotor; and

wherein the transmission mechanism is disposed in the second circulation path.

23. (Currently Amended) AnA apparatus for transporting plate-shaped work pieces comprising:

a frame;

a motor supported on the frame;

a fan, which is driven by the motor and which sends air upward;

a dust-removal filter disposed above the fan;

a plate-shaped porous member, which is disposed above the dust-removal filter and which has a plurality of apertures that allow air from the fan to pass upward; and

a circulation aperture formed in the porous member that allows the air to pass downward.

24. (Previously Presented) The apparatus for transporting plate-shaped work pieces according to claim 23, wherein the fan and the dust-removal filter are supported within a housing adapted to be supported on the frame and are thus incorporated into an air-supplying unit.

25. (Previously Presented) The apparatus for transporting plate-shaped work pieces according to claim 24, wherein a plurality of air-supplying units are disposed in a direction perpendicular to the transporting direction of the plate-shaped work piece, and a spacing between two adjacent air-supplying units allows air in the downward direction that has passed through the circulation aperture to pass through.

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26. (Canceled)

27. (Currently Amended) ~~The apparatus for transporting plate-shaped work pieces according to claim 26, further comprising:~~ An apparatus for transporting plate-shaped work pieces, comprising:

a frame;

an air-supplying support means, which is supported on the frame and which supplies filtered air toward a lower surface of a plate-shaped work piece being transported so as to contactlessly support the plate-shaped work piece, wherein the air-supplying support means has a dust-removal filter for removing dust, and an air-supplying means having an electric fan for supplying filtered air toward the lower surface of the plate-shaped work piece through the dust-removal filter; and

a housing supported by the frame and accommodating the dust-removal filter and the electric fan to integrate the dust-removal filter and the electric fan into a single air-supplying unit;

a drive force application means for applying a drive force in a transporting direction to the plate-shaped work piece;

wherein the drive force application means is provided with a drive rotor that contacts both end portions in a width direction, which is perpendicular to the transporting direction, of the plate-shaped work piece and applies a drive force thereto; and

wherein the air-supplying support means supports a portion located between the end portions of the plate-shaped work piece.

28. (Currently Amended) The apparatus for transporting plate-shaped work pieces according to claim ~~26~~ 27, wherein the air-supplying support means has a plurality of air-supplying units positioned in ~~[[a]]~~ the transporting direction of the plate-shaped work pieces.